

What is claimed is:

1. A double-stranded compound having a first strand and a second strand wherein:
said first strand is complementary to the nucleic acid molecule encoding human survivin (SEQ ID 14);
5 said second strand is complementary to said first strand;
said first and second strands are each 8-80 nucleobases in length; and
the double-stranded compound inhibits the expression of human survivin.
2. The double-stranded compound of claim 1 wherein one or both of said strands is 10-50 nucleobases in length.
- 10 3. The double-stranded compound of claim 1 wherein one or both of said strands is 12-30 nucleobases in length.
4. The double-stranded compound of claim 1 wherein one or both of said strands is 12-24 nucleobases in length.
- 15 5. The double-stranded compound of claim 1 wherein one or both of said strands is 19-23 nucleobases in length.
6. The double-stranded compound of any of claims 1-5 wherein the complementarity between the first strand and the nucleic acid molecule encoding human survivin is at least 70%.
7. The double-stranded compound of any of claims 1-5 wherein the complementarity between the first strand and the nucleic acid molecule encoding human survivin is at least 80%.
- 20 8. The double-stranded compound of any of claims 1-5 wherein the complementarity between the first strand and the nucleic acid molecule encoding human survivin is at least 90%.
9. The double-stranded compound of any of claims 1-5 wherein the complementarity between the first strand and the nucleic acid molecule encoding human survivin is at least 95%.
10. The double-stranded compound of claim 1 wherein the first strand is linked to the
25 second strand.
11. The double-stranded compound of claim 10 wherein the linkage is covalent.
12. The double-stranded compound of claim 10 wherein the linkage is via a nucleic acid linker.
13. The double-stranded compound of claim 10 wherein the two strands are self-
30 complementary and form a hairpin structure.
14. The double-stranded compound of claim 5 that is an siRNA, wherein said siRNA comprises a central complementary portion between said first and second strands and terminal portions that are optionally complementary between said first and second strands.

15. The siRNA of claim 14 wherein the terminal portions are overhangs 1-6 nucleobases in length located on either the 3' or 5' terminus of each strand.
16. The siRNA of claim 14 that is a canonical siRNA, wherin the central complementary portion between said first and second strands is 19 nucleobases in length and the terminal 5 portions consist of 3' overhangs of dTdT.
17. The canonical siRNA of claim 16 comprising compounds U17, U20, U23, U36, U48 or U54.
18. The canonical siRNA of claim 17 comprising compound U17.
19. The double-stranded compound of claim 5 that is a blunt-ended siRNA.
- 10 20. The blunt-ended siRNA of claim 19 that is targeted to the 3'UTR of human survivin (SEQ ID NO: 14).
21. The compound of any of claims 1-14 that is chemically modified.
22. The compound of claim 21 wherein the chemical modification is to the sugar, nucleobase, or internucleoside linkage.
- 15 23. The compound of 22 wherein the modification to the sugar is a 2' modification.
24. The compound of claim 23 wherein the 2' sugar modification is selected from the group consisting of a 2'-O-methoxyethyl (2'-MOE), 2'-O-methyl, locked nucleic acid (LNA) or 2'-fluoro modification.
25. The compound of claim 23 wherein the 2' modification is a 2'-O-methoxyethyl (2'-MOE).
26. The compound of claim 23 wherein the 2' modification is a 2'-O-methyl.
27. The compound of claim 23 wherein the 2' modification is a 2'-F.
28. The compound of claim 23 wherein the 2' modification of the sugar results in a bicyclic sugar.
29. The compound of claim 28 wherein the bicyclic modification is a locked nucleic acid (LNA).
30. The compound of claim 22 wherein the modification to the sugar is a 4'thio.
31. The compound of claim 21 comprising two or more chemically distinct sugar modifications.
- 30 32. The compound of claim 22 comprising a chemically modified nucleobase.
33. The compound of claim 32 wherein said modified nucleobase is a 5-methylcytidine.
34. The compound of claim 22 comprising at least one internucleoside linkage modification.

35. The compound of claim 34 comprising alternating phosphorothioate and phosphorodiester internucleoside linkages.
36. The compound of claim 21 comprising mixed phosphorothioate and phosphodiester linkages.
- 5 37. The compound of claim 21 which is a conjugate.
38. The compound of claim 1 comprising one or more modifications selected from the group consisting of phosphorothioate linkages, 2'-fluoro, 2'-O-methyl and 4'-thio.
39. The blunt-ended siRNA of claim 19 that is 19 nucleobases in length.
40. The blunt-ended siRNA of claim 39 having alternating PO/PS internucleoside linkages
- 10 in each strand, wherein said linkages are in opposing register.
41. The blunt-ended siRNA of claim 39 having alternating PO/PS internucleoside linkages in each strand, wherein said linkages are in identical register.
42. The blunt-ended siRNA of claim 19 that is 20 nucleobases in length.
43. The blunt-ended siRNA of claim 42 having alternating PO/PS internucleoside linkages
- 15 in each strand, wherein said linkages are in opposing register.
44. The blunt-ended siRNA of claim 42 having alternating PO/PS internucleoside linkages in each strand, wherein said linkages are in identical register.
45. The blunt-ended siRNA of claim 19 that is 21 nucleobases in length.
46. The blunt-ended siRNA of claim 19 that is 22 nucleobases in length.
- 20 47. The blunt-ended siRNA of claim 19 that is 23 nucleobases in length.
48. The siRNA of claim 15 wherein said terminal overhang portion is at one of the 5' termini of one of said strands.
49. The siRNA of claim 15 wherein said terminal overhang portion is at one of the 3' termini of one of said strands.
- 25 50. The siRNA of claim 14 wherein the central complementary portion is 19 nucleobases in length.
51. The siRNA of claim 14 wherein the central complementary portion is 20 nucleobases in length.
52. The siRNA of claim 14 wherein the central complementary portion is 21 nucleobases in
- 30 length.
53. The siRNA of claim 14 wherein the central complementary portion is 22 nucleobases in length.

54. The siRNA of claim 14 wherein the central complementary portion is 23 nucleobases in length.

55. A pharmaceutical composition comprising the compound of any of claims 1-54 and a pharmaceutically acceptable carrier or diluent.

5 56. A pharmaceutically acceptable salt of any of the compounds of claims 1-54.

57. The pharmaceutically acceptable salt of claim 56 that is a sodium salt.

58. The double-stranded compound of claim 1 having an IC₅₀ no greater than 1 nM.

59. The double-stranded compound of claim 1 having an IC₅₀ no greater than 2 nM.

60. The double-stranded compound of claim 1 having an IC₅₀ no greater than 5 nM.

10 61. A method of modification of the nucleic acid encoding human survivin (SEQ ID NO: 14) comprising contacting the nucleic acid molecule encoding human survivin with the compound of any of claims 1-54 said nucleic acid molecule encoding human survivin thereby being modified.

15 62. The method of claim 61 wherein said modification is characterized by cleavage of said nucleic acid molecule encoding human survivin.

63. A method of inhibiting survivin expression in cells or tissues comprising contacting said cells or tissues with the compound of any of claims 1-54.

20 64. A method for treating a condition associated with survivin expression or overexpression comprising administering to an animal, particularly a human, an effective amount of a compound of any of claims 1-54.

65. The method of claim 64 wherein the condition is cancer.

66. The method of claim 65 wherein the cancer is selected from the group consisting of hepatocellular cancer, breast cancer, colon cancer, prostate cancer, lung cancer, bladder cancer, ovarian cancer, renal cancer, glioblastoma, pancreatic cancer and non-Hodgkin's lymphoma.

25 67. A single-stranded RNAi oligonucleotide 8 to 80 nucleobases in length that specifically hybridizes to the nucleic acid molecule encoding human survivin (SEQ ID NO: 14) and inhibits the expression of said nucleic acid molecule encoding human survivin by acting through the RNAi antisense mechanism.

68. The single-stranded RNAi oligonucleotide of claim 67 that is 19 to 23 nucleobases in

30 length.

69. The single-stranded RNAi oligonucleotide of claim 68 that is an antisense RNA.

70. The single-stranded RNAi oligonucleotide of claim 67 that is chemically modified.

71. The single-stranded RNAi oligonucleotide of claim 70 wherein the modification is to the nucleobase, sugar or internucleoside linkage.